INTERNATIONAL SEARCH REPORT

International Application No PCT/US2004/038585

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B22D41/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC $\frac{1}{7}$ B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to daim No.	
X	DE 101 13 026 A1 (THYSSENKRUPP STAHL AG) 2 October 2002 (2002-10-02)	1,3-5,7, 8,10,11, 16-18, 20,21, 23,24	
Y	paragraphs '0037!, '0039!; figures 3,4	11,24	
X Y Y	EP 0 852 166 A (CENTRO SVILUPPO MATERIALI S.P.A) 8 July 1998 (1998-07-08) claims; figures	1,3-5,7, 8,10, 16-18, 20,21,23 11,24 2,6,9,	
		15,16, 19,22	
	-/		

•	
X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
 Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed 	 'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone 'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. '&' document member of the same patent family
Date of the actual completion of the international search 12 September 2005	Date of mailing of the International search report 19/09/2005
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Hodiamont, S

INTERNATIONAL SEARCH REPORT

International Application No PCT/US2004/038585

tegory °	ation) DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with Indication, where appropriate, of the relevant passages	Relevant to claim No.
	US 4 949 778 A (SAITO ET AL) 21 August 1990 (1990-08-21) cited in the application figures 4b,6b	2,6,9, 15,16, 19,22

INTERNATIONAL SEARCH REPORT

Information on patent family members

pternational Application No PCT/US2004/038585

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
DE 10113026	A1	02-10-2002	NONE		·
EP 0852166	Α	08-07-1998	IT	RM960869 A1	16-06-1998
			ΑT	220963 T	15-08-2002
			DE	69714203 D1	29-08-2002
			DE	69714203 T2	27-03-2003
			EP	0852166 A2	08-07-1998
			ES	2183119 T3	16-03-2003
US 4949778	A	21-08-1990	JP	1105053 U	14-07-1989
			JP	4028687 Y2	13-07-1992
			JP	1157751 A	21-06-1989
			JP	1770315 C	30-06-1993
			JP	4061739 B	01-10-1992
			JP	1180763 A	18-07-1989
			JP	1815812 C	18-01-1994
			JP	5027510 B	21-04-1993
			BR	8806679 A	29-08-1989
			CA	1318766 C	08-06-1993
			DE ·	3861957 D1	11-04-1991
			EP	0321206 A1	21-06-1989
			Κ̈́R	9604421 B1	03-04-1996